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DC-pulsed voltage electrochemical method based on duty cycle self-control for producing TERS gold tips

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Abstract

This paper presents a modified dc-pulsed low voltage electrochemical method in which a duty cycle is self tuned while etching. A higher yield of gold tips suitable for performing tip-enhanced Raman scattering (TERS) measurements is demonstrated. The improvement is caused by the self-control of the etching rate along the full surface of the tip. A capability of the gold tips to enhance a Raman signal is exemplified by TERS spectroscopy of single walled carbon nanotubes bundle, sulfur and vanadium oxide. © Published under licence by IOP Publishing Ltd.

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